FLUOR DANIEL ARCS TEAM

March 31, 1993

FDI/ARCS # 1863

U. S. Environmental Protection Agency
Attn: Stacey Bennett (6E-SH)
Work Assignment Manager
Region VI
1445 Ross Avenue
Suite 1000
Dallas, Texas 75202

CONTRACT NO. 68-W9-0013
PRELIMINARY ASSESSMENT NARRATIVE REPORT
GARLAND GAS AND LIGHT COMPANY
ARD 983267535
HOT SPRINGS, GARLAND COUNTY
WA # 24-6JZZ

Dear Ms. Bennett,

Transmitted with this letter are 6 copies of the referenced narrative report. Please note no PA-score was done on this site since no evidence of hazardous waste was observed during reconnaissance.

Should you have any questions please contact either of the undersigned at (214) 450-4100.

Sincerely,

Bill Park
ARCS Project Manager

Mark L. deLorimier, P.E.
ARCS Program Manager

BP/MLdL:kkh

Attachment

9440258

PRELIMINARY ASSESSMENT NARRATIVE REPORT
FOR
GARLAND GAS AND LIGHT
CERCLIS # ARD983267535
WA # 24-6JZZ

EPA Project Manager _____ Date _____

Project Manager _____ Date _____

Team Leader _____ Date 3-31-93

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PRELIMINARY ASSESSMENT NARRATIVE REPORT
FOR GARLAND GAS & LIGHT COMPANY
CERCLIS # ARD983267535
WA # 24-6JZZ

1.0 INTRODUCTION

Fluor Daniel has been tasked by the U.S. Environmental Protection Agency (EPA) to conduct a Preliminary Assessment (PA) for Garland Gas and Light Company (ARD983267535), formerly located in Hot Springs, Garland County, Arkansas. This Narrative Report discusses the results of the Preliminary Assessment.

The PA is the first stage of site assessment under Superfund. The goal of the PA is to assess the immediate or potential threat which wastes at the site may pose to human health and the environment and to collect information to support a decision regarding the need for further action under CERCLA/SARA. The scope of the investigation involves collection of information from federal, state, and local agencies, interviews of people knowledgeable of the site, and a site reconnaissance.

2.0 SITE DESCRIPTION

The Garland Gas and Light Company was formerly located at 348 Malvern Avenue, Hot Springs, Garland County, Arkansas (Ref.1). The site is bordered by Malvern Avenue to the north, Broad Way to the south, Thorsen Furniture to the east, and Arkansas Power and Light to the west (Ref.2). The site coordinates are

latitude 34°30'22" north and longitude 93°03'02" west (Ref.3). Figure 1 shows the location of the site.

The site operated as a coal gasification plant in the late 1800s for an unknown period of time. The gasification process heated coal in a vacuum to produce methane gas. The gas was captured and stored to be used as fuel for street lights in the downtown area. The coal gasification process apparently produced large quantities of oily, sludge-like wastes. Review of Sanborn Fire Insurance maps indicated former locations of storage tanks, coal storage areas, buildings and retorts. No evidence of waste disposal was indicated on the Sanborn Maps. The facility was demolished after electricity replaced gas as a fuel for street lights (Ref.4).

The potential risk posed by this site was purportedly disposal practices which may have included burial of wastes. Therefore, an assumption was made that coal sludge could have been buried at the former location of Garland Gas and Light. A site visit conducted during the Field Verification Study in September 1991, indicated no surface contamination on the property (Ref.4). Additionally, the site reconnaissance performed by Fluor Daniel on February 18, 1993, did not indicate the presence of surficial contamination. The site is currently owned and operated by Arkansas Louisiana Gas Company (ARKLA). There is one structure on the site that consist of

three levels. The basement of this structure is used for appliance and heavy equipment repair in bad weather. The ground floor is used for office space. The second floor is used for storage. Most of the site outside of the ARKLA building is paved (Ref.2).

3.0 PATHWAY AND ENVIRONMENT HAZARD ASSESSMENT

The following is a summary of the information gathered for each potential migration and exposure pathway.

3.1 Ground Water Migration Pathway

The site is located within Garland County which lies in a geologic province known as the Gulf Coastal Plain. The subsurface geology consist of folded, Paleozoic basement rock that is unconformably overlain by unconsolidated, Mesozoic and Cenozoic strata. The Redfield Formation of the Eocene, Jackson Group directly underlies the site. Local thickness of this formation and the underlying unconsolidated sediment are approximately 2,000 feet. However, these underlying sediment have a limited ground water recharge rate. Therefore, ground water is not used as a source of drinking water in the Hot Springs area (Ref.5).

No evidence has been gathered which indicates the burial of sludge on site. Therefore, it can not be stated that a release to ground water is suspected. No analytical data

exists to support a release to ground water from the former Garland Gas and Light facility.

The materials reviewed and referenced during the PA indicate that drinking water for the entire population within a four mile radius of the site is obtained from surface water sources (Ref.6).

3.2 Surface Water Migration Pathway

Based upon the site reconnaissance, it has been determined that site drainage enters Hot Springs Creek. The probable point of entry (PPE) is approximately 450 feet south of the site. The fifteen mile downstream segment consists of Hot Springs Creek which flows approximately four miles to Lake Hamilton. Lake Hamilton flows approximately two miles to Lake Catherine which flows approximately four miles to the Ouachita River. The remaining miles in the fifteen mile downstream segment consist of the Ouachita River. The fifteen mile downstream segment is comprised primarily of the Ouachita River. Stream flow of the Ouachita River, as measured by the Corps of Engineers at Shorewood Hills, Arkansas, is 2,757 cubic feet per second (cfs) (Ref.7). This site is located outside of the 500 year flood plain (Ref.8)

A release to surface water is not suspected. No visual evidence of surface contamination from the former gas and

light facility was noted during the site reconnaissance. The protracted period of time since operations ceased in the early 1900s further diminishes the threat to surface water. No analytical data exists to support a release to surface water.

The City of Hot Springs currently obtains its municipal water supply from Ouachita River which flows to the east. Water is withdrawn from the northwest corner of Lake Hamilton and pumped into Lake Side Plant Reservoir. From there the water is treated and pumped to the residents of Hot Springs (Ref.9). The site is approximately four miles south of the Ouachita River (Ref.3).

It appears that there are no wetlands within a four mile radius of the site (Ref.3). Wetland maps for the Hot Springs area were not available through the National Wetlands Inventory Program (Ref.10). Although there are soils that are endemic to wetlands, no wetland maps exist to verify locations at this time (Ref.11).

The Arkansas Natural Heritage Commission was contacted regarding threatened and endangered species of flora and fauna in Garland County. The Bald Eagle is listed as both federally threatened and endangered. The Ozark Chinquapin (Castanea, pumila ozarkensis) and the Ouachita Leadplant (Amorpha,

0014

ouachitensis) are plants currently listed as threatened or endangered by U.S. Fish and Wildlife Service. The Arkansas Natural Heritage Commission is currently conducting an inventory on numerous species of flora and fauna to determine their status in the state (Ref.12).

These sensitive environments do not constitute primary targets since a release of hazardous waste is not suspected. A release is not suspected due to the protracted period of time since operations ceased, the lack of analytical data, and the absence of evidence indicating waste disposal.

3.3 Soil Exposure and Air Migration Pathways

Due to the limited information, the extent of contaminants on the site are undetermined. However, if wastes generated as a result of Garland Gas and Light are currently on site, they are in the subsurface and not available to the soil exposure pathway (Ref.4).

The former location of Garland Gas and Light Company is now Arkansas Louisiana Power and Light (ARKLA). There are currently no residents living on the property. There are 43 full time ARKLA employees on site daily (Ref.2).

The nearest residence is approximately a 1/4 mile from the site. The nearest regularly occupied building is the ARKLA

office building (Ref.2). There are no schools or daycare facilities within 200 feet of the site. The population within a four mile radius of the site is approximately 8389 (Ref.13).

Information gathered to date does not indicate that a release of hazardous substance to air has occurred. No evidence of waste was noted during the Field Verification Survey or the Preliminary Assessment site reconnaissance.

4.0 SUMMARY AND CONCLUSIONS

The Garland Gas and Light was formerly located in Hot Springs, Arkansas. Sanborn Fire Insurance Maps indicate that the Garland Gas and Light Company operated during the late 1800s through the early part of the 1900s. The site operated for an unknown period of time. The coal gasification process apparently generated large quantities of oily, sludge-like wastes. The site reconnaissance performed as part of the PA did not indicate any visual evidence of surface contamination on the property. The location is presently occupied by ARKLA.

The potential risk which originally indicated that a Preliminary Assessment was appropriate for this site was based upon an assumption that industrial disposal practices at the turn of the century included burial of wastes. Data gathered during Field Verification Study and Preliminary Assessment do

not support this assumption. It can not be stated that a release to ground water is suspected.

The site is located approximately 450 feet from Hot Springs Creek, three miles from Spencer Bay, and four miles from the Ouachita River. The City of Hot Springs obtains its water from the Ouachita River. The surface water target distance limit is comprised of Hot Springs Creek, Lake Hamilton, Lake Catherine, and the Ouachita River. A release to surface water is not indicated by the data available for this site. No analytical data exists to support a release to surface water.

Information gathered to date for Garland Gas and Light does not indicate that a release of hazardous substance to air has occurred.

5.0 REFERENCES

1. Jackie Davis, Arkansas Louisiana Gas Company, Record of Communication with Hilary McConnell, Fluor Daniel, Inc., ARCS Project Biologist, January 21, 1993.

2. Jackie Davis, Arkansas Louisiana Gas Company, Record of Communication with Hilary McConnell, Fluor Daniel, Inc., ARCS Project Biologist, January 27, 1993.

3. U.S. Geological Survey, 7.5 minute topographical map, Hot Springs, Arkansas, 1966 (photorevised 1976).

4. Field Verification Survey, Garland Gas and Light Company, Prepared by SWL Environmental, September 25, 1991.

5. Ground Water Resources of Jefferson County, University of Arkansas, Institute of Science and Technology and U.S. Geological Survey, 1949.

6. Milton Raabe, Water Department, Record of Communication with Hilary McConnell, Fluor Daniel, Inc., ARCS Project Biologist, February 3, 1993.

7. Corps of Engineers, Record of Communication with Hilary McConnell, Fluor Daniel, Inc., ARCS Project Biologist, March 15, 1993.

8. Federal Emergency Management Agency, National Flood Insurance Rate Map, Hot Springs, Arkansas.

9. Jim Atchley, Street Department City of Hot Springs, Record of Communication with Hilary McConnell, Fluor Daniel, Inc., ARCS Project Biologist, March 17, 1993.

10. Dennis Swartwout, National Wetland Inventory, Record of Communication with Hilary McConnell, Fluor Daniel, Inc., ARCS Project Biologist, March 4, 1993.

11. Danny Sudneyer, Soil Conservation Service, Record of Communication with Hilary McConnell, Fluor Daniel, Inc., ARCS Project Biologist, March 29, 1993.

12. Arkansas Natural Heritage Commission, Department of Natural Heritage, Inventory Research Program, Elements of Special Concern, Garland County, December 4, 1992.

13. USEPA GEMS Census Data Software, Accessed February, 1993.

REFERENCES

REFERENCE 1

JACKIE DAVIS, ARKANSAS LOUISIANA GAS COMPANY, RECORD OF COMMUNICATION WITH HILARY MCCONNELL, FLUOR DANIEL, INC., JANUARY 21, 1993.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
SUPERFUND SITE STRATEGY RECOMMENDATION - REGION 06

Site Name: Pulaski Gas and Light CERCUS ID#:ARD983267550

Address: S. Bank of the Arkansas River/North Cumberland Street

City/County or Parish/State/Zip Code: Little Rock/Pulaski/AR

Report Type, Date, and Author: PA, March 31, 1993, Fluor Daniel

RECOMMENDATION

(x) 1. Site Evaluation Accomplished (SEA) ( ) 2. Further Investigation Needed Under Superfund
( ) PA ( ) HRS Priority: ( ) High
( ) SI ( ) RA ( ) Low
( ) ESI ( ) RI/FS
( ) Other:
To be performed by:

( ) 3. Action Deferred to:
( ) RCRA ( ) NRC

NOTIFY AUTHORITY:

( ) Removal	( ) RCRA	( ) TSCA	( ) CAA	( ) SMCRA	
( ) Remedial	( ) State	( ) NPDES	( ) NRC	( ) Resource Trustee:	
( ) CERCLA Enforcement	( ) Federal Facility	( ) UIC	( ) SPCC	( ) Other:	
SEND REPORT COPIES TO:	(X)6E-E	(X) 6W-SP	(X) ATSDR	(X) State Agency	( ) Other

DISCUSSION: The Preliminary Assessment (PA) for this site, completed by the ARCS contractor Fluor Daniel was reviewed. This site operated as a coal gasification plant in the late 1800s to early 1900s, for an unknown period of time. The coal gasification processes reportedly produced large amounts of oily, sludge-like wastes. This site is currently occupied by the City of Little Rock Riverfront Park. Site visits during the Field Verification Study in 1991 and during the site reconnaissance in 1993, conducted as part of the PA, did not find any evidence of surficial contamination. There is no evidence that a release of hazardous substances to the soil, ground water, surface water or air has occurred at this site. Ground water is not used as a source of drinking water for the City of Little Rock. The City of Little Rock's municipal drinking water supply is obtained from surface water sources. These sources are Lake Maumelle and lake Winona. Lake Maumelle is located approximately 13 miles upstream and northwest of the site; Lake Winona is located in Saline County, approximately 30 miles west of the site. There are no residences, schools, or daycare facilities located within 200 feet of the site. Based on the results of the PA, a decision of Site Evaluation Accomplished is recommended for this site.

APPROVALS:

Report Reviewed by: John L. Jones Signature: John L Jones Date: Aug/25/93

Disposition Recommended by: Edwin A. Sierra (Section Chief) Signature: Edwin A. Sierra Date: 8/25/93

Disposition Approved by: Betty Williamson (Branch Chief) Signature: For Betty Williamson Date: 8/25/93

RECORD OF TELEPHONE CONVERSATION

From Hilary McConnell **Date:** 01-21-93

Location: Fluor Daniel, Inc. Dallas **Time:** 9:35 PM

Subject: File Information

To: Jackie Davis, Arkansas Louisiana Gas Co. **P.O. Number:** _

Location: Hot Springs, AR

Other Ref.: (501) 623-7744

Arkansas Louisiana Gas Co.
348 Malvern Ave.
P.O. Box 1090
Hot Springs, AR. 71901
Attn: Jackie Davis - Operations Superintendent

Send letter for permission to go on property to Jackie Davis - Operation Superintendent

REFERENCE 2

JACKIE DAVIS, ARKANSAS LOUISIANA GAS COMPANY, RECORD OF COMMUNICATION WITH HILARY MCCONNELL, FLUOR DANIEL, INC., JANUARY 27, 1993.

RECORD OF TELEPHONE CONVERSATION

From: Hilary McConnell **Date:** 01-27-93

Location: Fluor Daniel, Inc. Dallas **Time:** 11:30 AM

Subject: File Information

To: Jackie Davis ARKLA **P.O. Number:** _

Location: Hot Springs, Ar

Other Ref.: (501) 623-7744

1 structure on the property consisting of 3 levels. Some appliance repair is done in the basement as well as heavy equipment repair in bad weather. The middle level is office space. The attic is for storage.

Boundaries of site:

East - Thorsen Furniture

West - Arkansas Power and Light

Southwest - Hot springs creek - 30 to 50 ft from boundary

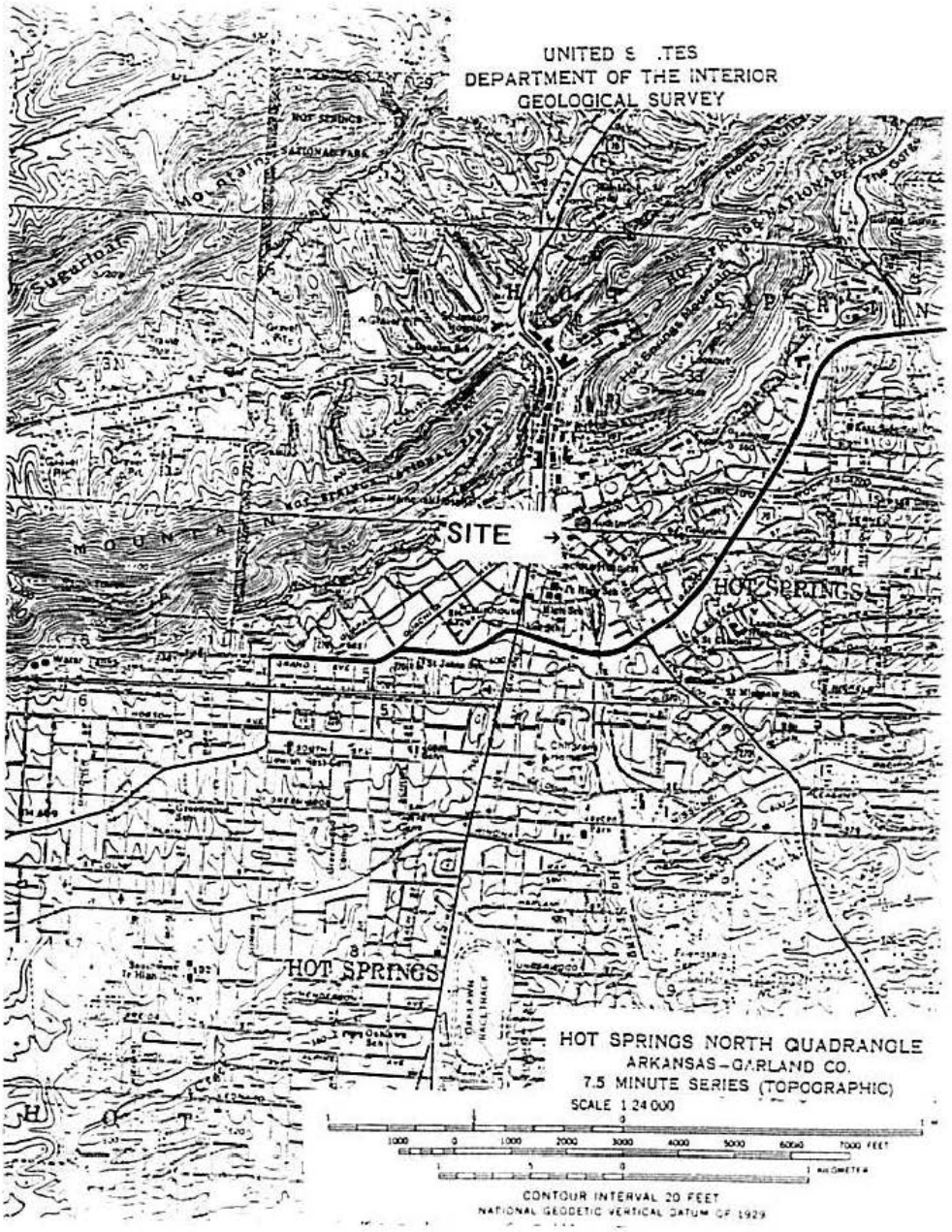
North - Malvern Avenue

The site is on municipal water.

Number of employees is 43.

REFERENCE 3

U.S. GEOLOGICAL SURVEY, 7.5 MINUTE
TOPOGRAPHICAL MAP, HOT SPRINGS, ARKANSAS,
1966 (PHOTOREVISED 1976)



REFERENCE 4

**FIELD VERIFICATION SURVEY,
PREPARED BY SWL ENVIRONMENTAL,
SEPTEMBER 25, 1991.**

Superfund Site Strategy Recommendation **Region 6**

Site Name: Garland Gas & Light Co. Site Number: ARD981267535

Alias Site Name(s): _____

Address: 118 Malvern Avenue

City/County or Parish/State/Zip: Hot Springs/Garland/AR/71901

Recommendation:

[ ] 1. No further remedial action planned under Superfund.

[X] 2. Further pre-remedial investigative action needed under Superfund:

PA X Priority: High _____
SSI _____ Medium X
LSI _____
Other _____
To be performed by ARCs Contractor

[ ] 3. Action may be appropriate under other authority:

NPDES _____ SPCC _____ 404 _____ TSCA _____
UIC _____ SMCRA _____ STATE _____ RCRA _____
OTHER _____

Discussion: During the late 1800's and early 1900's gas plants were constructed to produce gas that was used to fuel street lights. This coal gasification process involved heating coal in the absence of air. The process produces large quantities of oily sludge-like material. At the time it was not uncommon for the waste to be disposed on-site by burial, which often resulted in these facilities exhibiting extensive subsurface contamination. The ARCs contractor located this facility from Sanborn Fire Insurance maps. The maps show specific locations of storage tanks, coal storage areas, buildings, purifiers and retorts. The site is presently occupied by the Arkansas Louisiana Gas Co. And consists of an office building and equipment service area. During the field verification survey no visual evidence of contamination was observed. However if contamination exists on the property the most probable location would be in the subsurface soils and groundwater. A Preliminary Assessment of this site is recommended to determine if tho site will require further investigation.

Copies to (please list) ATSDR 6W-S State

Recommended By: John L. Jones Date: April 30, 1992

Approved By: Carlene Chambers for BW Date: 5/7/92

FIELD VERIFICATION SURVEY

GARLAND GAS AND LIGHT COMPANY
HOT SPRINGS, ARKANSAS

Prepared for

FLUOR DANIEL, INC.
DALLAS, TEXAS

September 25, 1991

SwL Report EC91-4-076 AR9

Mark J. Ezell
Environmental Project Manager

R. Steve Pierce, R.E.P.
Manager - Baton Rouge
Environmental Consulting
Services

Prepared by

SwL Environmental
a division of
Southwestern Laboratories, Inc.
10201 Mayfair Drive, Suite J
Baton Rouge, Louisiana 70809

FIELD REPORT SITE DISCOVERY

GARLAND GAS AND LIGHT COMPANY
HOT SPRINGS, ARKANSAS

The search for a facility known as the Garland Gas and Light Company was initiated based on past experience of old gas companies. During the late 1800's and early 1900's, gas plants were constructed in the center of a town to produce gas that was used to fuel street lights in the downtown area. The gas was produced from a process known as "Coal Gasification". When coal is heated in the absence of air, it produces methane gas that can be easily captured, stored, and piped to various locations. This process generated a large amount of oily sludge-like waste. During this time it was not uncommon for the waste to be disposed on-site by burial, which often resulted in these facilities exhibiting extensive subsurface contamination.

The Garland Gas and Light Company was located by reviewing available Sanborn Fire Insurance Maps for the city of Hot Springs, Arkansas. The facility appeared on the 1886, 1892 and 1901 maps located between Malvern Avenue and Valley Street near Church Street. The maps show specific locations of storage tanks, coal storage areas, buildings, purifiers and retorts.

The site is presently occupied by the Arkansas Louisiana Gas Company and consists of an office building and equipment service area. The original gas plant was apparently demolished some time after electricity replaced gas to fuel street lights.

During the site visit, no visual evidence of contamination that may have originated from the previous gas company's existence was observed. If contamination exists on the property, the most probable location would be in the subsurface soils and groundwater.

Attachments

EPA 2070 Form
Site Discovery Field Verification Checklist
Site Location Map
Site Photographs
Sanborn Fire Insurance Map

EPA POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION

REGION | SITE NUMBER

NOTE: The initial identification of a potential site or incident should not be interpreted as a finding of illegal activity or confirmation that an actual health or environmental threat exists. All identified sites will be assessed under the EPA 's Hazardous Waste Site Enforcement and Response System to determine if a hazardous waste problem actually exists.

A. SITE NAME: Garland Gas and Light company

B. STREET (or other identifier): 338 Malvern Avenue

C. CITY: Hot Springs

D. STATE: AR

E. ZIP CODE: 71901

F. COUNTY NAME: Garland

G. OWNER/OPERATOR (if known)
1. NAME: Arkansas Louisiana Gas Company
2. TELEPHONE NUMBER:

H. TYPE OF OWNERSHIP (if known)
☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☒ 5. PRIVATE ☐ 6. UNKNOWN

I. SITE DESCRIPTION

The subject site is located between Malvern Avenue and Valley Street near the intersection with Church Street in Hot Springs, Garland County, Arkansas. No original gas plant structures remain on-site. The site is presently occupied by the Arkansas Louisiana Gas Company and consists of an office building and equipment service area.

J. HOW IDENTIFIED (e.g., citizen's complaint, OSHA citation, etc.)

K. DATE IDENTIFIED (mo, day & yr.)

L. SUMMARY OF POTENTIAL OR KNOWN PROBLEM

The subject site was the location of the Garland Gas and Light Company until the early 1900's, at which time the plant was taken out of service and utilized for other purposes. The gas works produced methane gas by a process known as Coal Gasification. The gasification process generated an oily sludge waste. This waste was usually disposed on-site. Similar sites in the United States have shown significant subsurface contamination.

M. PREPARER INFORMATION
1. NAME: Ray E. Ferrell

2. TELEPHONE NUMBER: 504/293-0676

3. DATE (mo, day & yr.): 8/23/91

EPA Form 2070-6 (8-80)

NAME: Arkansas Louisiana Gas Company
LOCATION: Hot Springs, Arkansas

SITE NAME: Garland Gas and Light company
DATE: 9/17/91

SITE DISCOVERY FIELD VERIFICATION CHECKLIST

INSTRUCTIONS

The purpose of this checklist is to ensure the sufficient cursory observations have been made.

You are not expected to have "hard" data for all the information, especially during this stage of the pre-remedial process. Best estimates based on professional judgement are encouraged.

When completing the checklist, keep in mind that this document will assist the EPA in its decision making process. For example, does the site warrant further investigation? Therefore, it is important to record all major assumptions or estimates.

General Description of Facility (site-related noteworthy information):

The subject site is located between Malvern Avenue and Valley Street near the intersection with Church Street in Hot Springs, Garland County, Arkansas. No original gas plant structures remain on-site. The site is presently occupied by the Arkansas Louisiana Gas Company and consists of an office building and equipment service area.

Sources (if possible, describe contaminant sources i.e., surface impoundment, lagoon, etc.):

The subject site was the location of the Garland Gas and Light Company until the early 1900's, at which time the plant was taken out of service and utilized for other purposes. The gas works produced methane gas by a process known as Coal Gasification. The gasification process generated an oily sludge waste. This waste was usually disposed on-site. Similar sites in the United States have shown significant subsurface contamination.

Site Photodocumented __X__ YES _____ NO

If no, please explain:

Site Name: Garland Gas and Light Company
Date: 9/17/91

GROUNDWATER PATHWAY

__Yes__ Are sources poorly contained?

__Yes__ Is the source a type likely to contribute to GW contaminants?

__No__ Is the site overlying Karst terrain?

__No__ Is the aquifer shallow?

_____ Depth to aquifer.

__No__ Any direct evidence of GW or drinking water contamination?

__No__ Are any wells nearby?

_____ If so, estimate distance.

__No__ Are any wells closed?

Type of GW use:

_____ Private

__X__ Municipal

_____ School

_____ Business

Site Name: Garland Gas and Light Company
Date: 9/17/91

SURFACE WATER PATHWAY

No Are sources poorly contained?

No Is surface water nearby?

Drainage area:

____ < 50 acres

____ 50 to 250 acres

____ 250-1000 acres

____ > 1000 acres

No Does drainage (run-off) lead to surface water?

No Is run-off defined (eg. ditch or channel)?

No Stressed vegetation along run-off path?

No Is wildlife unnaturally absent?

No Is site in a floodplain?

No Any nearby drinking water intakes?

No Fisheries (downstream)?

No Sensitive environments (downstream)?

Is surface water body?

____ slow moving ____ small

____ fast moving ____ large

Site Name: Garland Gas and Light Company
Date: 9/17/91

SOIL EXPOSURE PATHWAY

Yes Is source likely to contribute to soil contamination?

No Is the site active?

Yes Are residences, worker or other inhabited buildings on-site?

1 If so, estimate numbers/residences.

Yes Any within 200 feet?

Yes Is source near property boundary?

Yes Does an overland migration route exist near residences?

No School or Daycare within 200 feet of site?

AIR PATHWAY

No Sources poorly contained?

No Any noticeable odors?

No Any population suspected to be exposed to contaminants?

2000 Approximate population within 1/4 mile of site?

No Would source likely contribute to air contamination?

No Is there evidence of fires?

No Any schools or businesses within 1 mile radius of site?

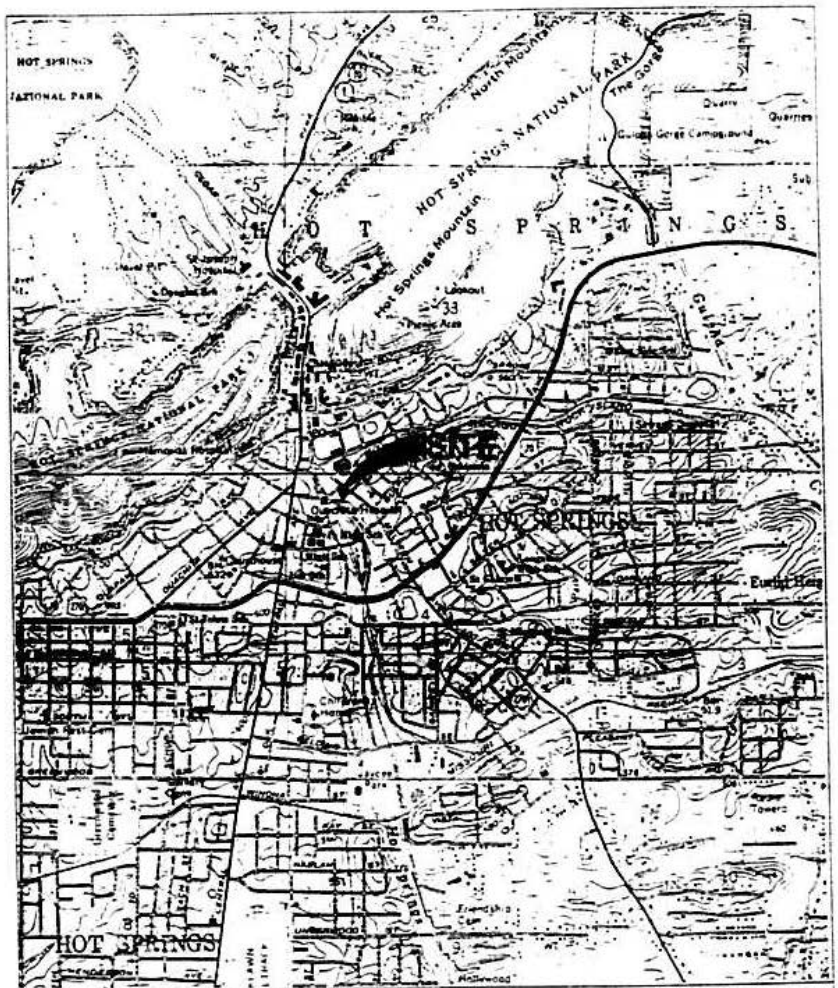


FIGURE 1 - SITE LOCATION MAP

HOT SPRINGS NORTH QUADRANGLE, ARKANSAS
U.S.G.S. 7.5 MINUTE SERIES (TOPOGRAPHIC)
SCALE 1" = 2000'

SwL EC91-4-076 AR9

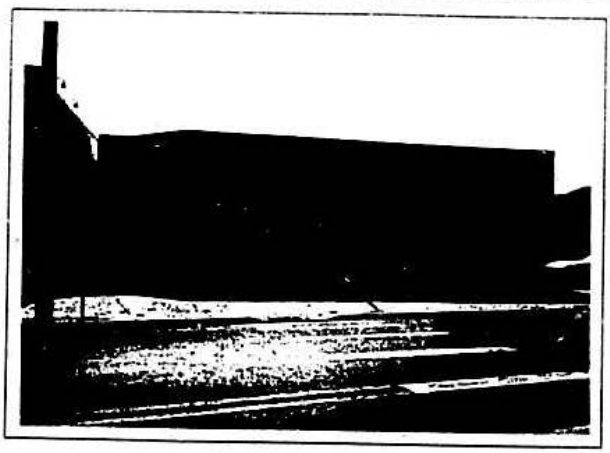
N

Date:
9/17/91

Time:
1530 hrs.

Direction:
West

Photographer:
Ray Ferrell



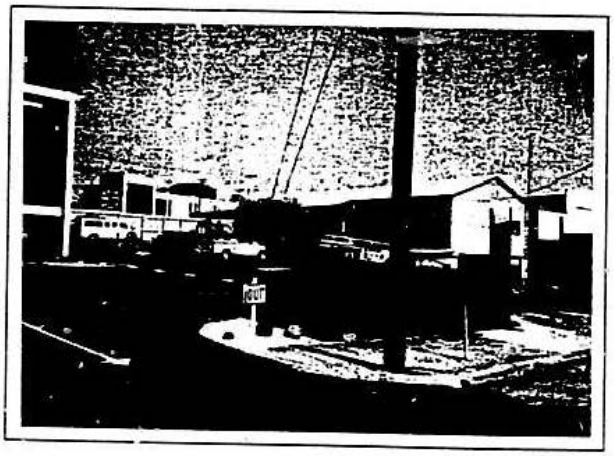
1) View of subject site from Malvern Avenue.

Date:
9/17/91

Time:
1537 hrs.

Direction:
Southeast

Photographer:
Ray Ferrell



2) View of north side of subject site

SITE PHOTOGRAPHS

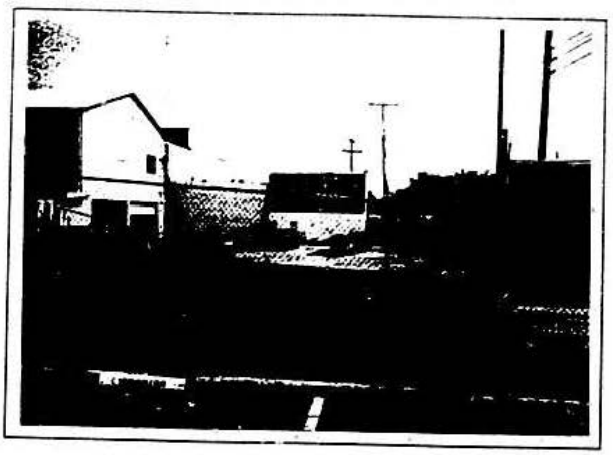
S+L EC91-4-076 AR9

Date:
9/17/91

Time:
1538 hrs.

Direction:
South

Photographer:
Ray Ferrell



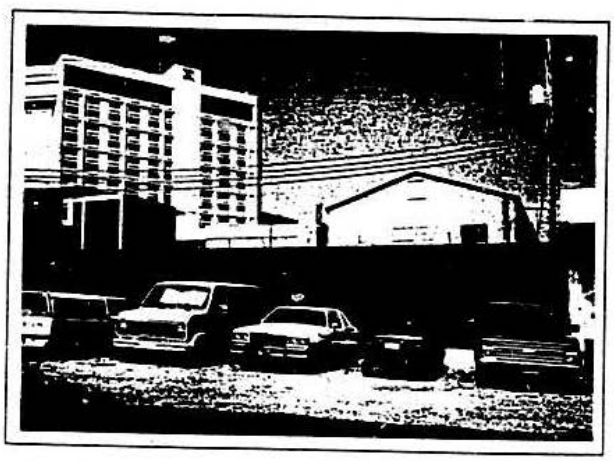
3) View of west end of subject site.

Date:
9/17/91

Time:
1541 hrs.

Direction:
East

Photographer:
Ray Ferrell



4) View of west end of subject site.

SITE PHOTOGRAPHS

S4L EC91-4-075 AR9

ARD98 3267535

EPA

POTENTIAL HAZARDOUS WASTE SITE LOG

SITE NUMBER

NOTE: The initial identification of a potential site or incident should not be interpreted as a finding of illegal activity or confirmation that an actual health or environmental threat exists. All identified sites will be assessed under the EPA's Hazardous Waste Site Enforcement and Response System to determine if a hazardous waste problem actually exists.

SITE NAME AND STREET ADDRESS (or other identifier): Ozarka Gas & Light Company

CITY: Hot Springs | STATE: AR | ZIP CODE: 71909

SUMMARY OF POTENTIAL OR KNOWN PROBLEM

ITEM	DATE OF DETERMINATION OR COMPLETION	RESPONSIBLE ORGANIZATION OR INDIVIDUAL (EPA, State, Contractor, Other)	PERSON MAKING ENTRY TO LOG FORM	DATE ENTERED ON LOG (mo.,day,yr)
1. IDENTIFICATION OF POTENTIAL PROBLEM	6-4-90	EPA 600/7-85-004	Newman	6-4-90
2. PRELIMINARY ASSESSMENT				
3. SITE INSPECTION				
4. SUPERFUND SITE STRATEGY RECOMMENDATION				
☐ a. no further action needed - no hazard				
☐ b. no further remedial action planned under SFN-Site would not score				
☐ c. no further remedial action planned under SFN-other authority				
☐ d. further pre-remedial investigation needed			SUPERFUND FILE	
			MAR 04 1992	
			REORGANIZED	
STRATEGY COMPLETED				

EPA Form [redacted] (R-12-79) PREVIOUS EDITION MAY BE USED

April 29, 1992

MEMORANDUM

SUBJECT: Tasking of Preliminary Assessmants (PA) under the ARCS Contract

FROM: Ed Sierra, Chief
Superfund Site Assessment Section (6H-MA)

TO: Stacey Bennett
Hazardous Waste Section (6E-SH)

Please Task the ARCS contractor to conduct PAs on the following sites:

1. Fort Smith Gas & Light Company
ARD983267519

2. Garland Gas & Light Company
ARD983267535

3. Gas & Electric, Light Company in Texarkana
ARD983267576

4. Helena Gas & Light
ARD993267527

5. Pino Bluff Gas & Light
ARD983267568

6. Pulaski Gas & Light in Little Rock
ARD983267550

7. South Arkansas Re-Cycling in East Camden
ARD980507776

8. Water, Light & Power Company in Newport
ARD983267584

If you have any questions regarding this matter please contact me at X6740.

6H-MA:JONES:jj:Disk 1 Section:LAN:A:\064.JJ:4-29-92

5/21/90

EPA POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION

REGION: 6 SITE NUMBER: ARD963267535

NOTE: The initial identification of a potential site or incident should not be interpreted as a finding of illegal activity or confirmation that an actual health or environmental threat exists. All identified sites will be assessed under the EPA's Hazardous Waste Site Enforcement and Response System to determine if a hazardous waste problem actually exists.

A. SITE NAME: Garland Gas & Light Co

B. STREET (or other identifier): unknown ARD 983267535

C. CITY: Hot Springs

D. STATE: Ar E. ZIP CODE: 71909 F. COUNTY NAME: Garland

G. OWNER/OPERATOR (if known)
1. NAME
2. TELEPHONE NUMBER

H. TYPE OF OWNERSHIP (if known)
☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☒ 4. MUNICIPAL ☐ 5. PRIVATE ☐ 6. UNKNOWN

I. SITE DESCRIPTION
Town gas & by product facility

J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.)
EPA 1600-7-85-004

K. DATE IDENTIFIED (mo., day, & yr.)
2/85

L. SUMMARY OF POTENTIAL OR KNOWN PROBLEM
possible groundwater, surface water contamination

SUPERFUND FILE
MAR 04 1992
REORGANIZED

M. PREPARER INFORMATION
1. NAME: Clara Howell
2. TELEPHONE NUMBER: 655 6740
3. DATE (mo., day, & yr.): 5/15/90

EPA Form 2070-4 (5-80)

REFERENCE 5

GROUND WATER RESOURCES OF JEFFERSON COUNTY, UNIVERSITY OF ARKANSAS, INSTITUTE OF SCIENCE AND TECHNOLOGY AND U.S. GEOLOGICAL SURVEY, 1949.

Ground-Water Resources of Jefferson County, Arkansas

Howard Klein
R. C. Baker
G. A. Billingsley
U. S. Geological Survey

UNIVERSITY OF ARKANSAS
INSTITUTE OF SCIENCE AND TECHNOLOGY
FAYETTEVILLE

lar to that of other counties in the Gulf Coastal Plain in Arkansas in that there is a basement composed of relatively old, well-consolidated, folded rocks unconformably overlain by strata of unconsolidated material. In Jefferson County the unconsolidated rocks range in total thickness from a little more than 2,000 to more than 4,000 feet; only those at a depth of less than 2,000 feet are important for water supply. All the ground water used at present comes from shallower depths and it is unlikely that any ground water of a satisfactory quality can be obtained from depths greater than 2,000 feet.

There was no opportunity to examine the rocks underlying Jefferson County, so most of the information available is from a few electric logs of oil-test wells, from other reports, and from drillers' logs, which, because of the lack of uniformity in describing material, were difficult to interpret.

In general, the younger rocks dip to the southeast and tend to thicken in that direction so that the older formations have a steeper dip than the younger formations. There is not enough information on the county to indicate structural details such as faulting or folding of the rocks. A generalized geologic column of the rocks underlying Jefferson County is given in Table 1.

Rocks of Paleozoic age crop out about 18 miles northwest of Jefferson County. Spooner (*14*) estimates that they are about 2,000 feet below sea level under the northwestern part of the county and 4,600 feet below sea level under the southeastern part. The Paleozoic rocks are relatively old, well compacted, and folded, and are considered as the basement rocks.

Rocks of the Mesozoic era unconformably overlie the Paleozoic rocks. Some of the Mesozoic rocks might yield water to wells. However, any water from them would likely be highly mineralized and not suitable for ordinary use.

Tertiary System

Paleocene Series

MIDWAY FORMATION.—The Midway formation overlies rocks of the Mesozoic era. Spooner (*14*) reports that the Midway consists of gray and bluish-gray clay with abundant siderite concretions. He gives the thickness as 460 to 500 feet. The top of the Midway is about 1,500 feet below sea level in the northwestern part of the county and is probably less than 3,000 feet below sea level in the extreme southeastern part. It is unlikely that the formation is a source of ground water because it consists largely of clay.

relatively impermeable, probably preventing the downward movement of water from the overlying sands and causing artesian conditions in the upper sands of the Wilcox formation.

SPARTA SAND.[4]—The Sparta sand overlies the Cane River formation. It consists of white to light-gray fine to medium-grained massive sands, with beds and lenses of light-gray or tan clay and sandy clay. Lignite is not as common in the Sparta as in the overlying and underlying formations. The presence of glauconitic sands possibly is the result of reworking materials of older strata by streams. In general, the Sparta sand is of continental origin.

The upper and the lower contacts of the Sparta sand are conformable and gradational. Correlations from place to place are difficult because the constituents change rapidly. It ranges from about 450 to 800 feet in thickness. The thickness varies considerably within short distances. In the northwest part of the county the top of the Sparta is about at sea level. In the extreme southeastern corner of Jefferson County it is about 900 feet below sea level. Available data indicate that the top of the Sparta is about 470 feet below sea level at Pine Bluff. The Sparta sand probably crops out at the ground surface a few miles west of Jefferson County and presumably is exposed under Quaternary deposits north of Jefferson County.

Sands of the Sparta probably supply all the water pumped from deep wells that penetrate the deposits of Eocene age in Jefferson County. There may be two or possibly three zones in the Sparta sand that yield water to wells. The upper sands are the more massive individual beds, attaining a thickness of 200 feet in places. The upper sands of the Sparta appear to contain fresh water everywhere in Jefferson County, but in places the lower sands may contain salty water. It is not possible to predict the depths and thicknesses of the productive zones because of the lack of uniform bedding. Many of the sand beds are interconnected; however, some sandy zones appear to be separated by relatively impermeable material, so that there may be more than one artesian system in the formation. Generally, the Sparta yields water to wells, but it is reported that in a few areas wells could not be developed in the Sparta that would yield even a few hundred gallons per minute. These areas are not

[4] Studies of the Eocene rocks in Arkansas, made after this report was written, raise a doubt as to whether the sandy zone that yields water to deep wells in Jefferson County, and called Sparta in the report, is correlative with the Sparta as recognized in southern Arkansas. The study shows that the correlation is problematical, but so far the results are not sufficient to permit any definite conclusions. The description of the occurrence and character of the sandy zone and of its hydrologic properties, however, are not affected.

large and are relatively unimportant as wells a few hundred feet distant may have large yields.

CLAIBORNE GROUP (UPPER PART) AND JACKSON FORMATION, UNDIFFERENTIATED.—In southern Arkansas the part of the Claiborne group above the Sparta sand consists of the Cook Mountain formation, composed largely of silty to sandy clay and less than 200 feet thick, and the Cockfield formation, predominantly gray sand and up to 500 feet thick. The Claiborne group is overlain by the Jackson formation, which consists of sand and clay.

The general zones correlative with these Eocene formations can be recognized in Jefferson County. In the county, however, the Cockfield contains considerable clay and the Cook Mountain and Jackson formations contain lenses of sand, so that it does not appear to be satisfactory to determine formation boundaries by using only the type of material. No attempt is made here to differentiate these formations in Jefferson County, and hereafter they are referred to as undifferentiated Eocene deposits.

The Jackson formation crops out along the western edge of Jefferson County in a belt about 5 miles wide on the north and 16 miles wide on the south side. (See Figure 4, in which the surface geology is taken in modified form from the geologic map of Arkansas by Branner (*3*).) It consists of silt and clay with some sand beds and in places is glauconitic.

All the wells tapping sands in the undifferentiated Eocene deposits are in the western part of the county. There are several sand layers that yield fresh water to wells. The individual beds average less than 20 feet in thickness and do not yield large amounts of water, but do provide water for domestic use and small public supplies. Fresh water may be taken at several depths from the undifferentiated deposits. In the vicinity of Redfield a water sand is found about 160 feet above sea level. An electric log of a well near Sherrill shows that water sands occur at depths ranging from 300 to 350 feet below the surface. In the vicinity of Pine Bluff a moderate amount of water of good quality can be obtained at depths ranging from 150 feet to more than 300 feet below the surface, or from 60 feet above to 90 feet below sea level.

Unidentified Late Cenozoic Deposits

In western Jefferson County, as in some other parts of Arkansas, are deposits of gravel, sand, and clay obviously younger than the Eocene and other deposits on which they rest, and older than the overlying or adjacent alluvium of Quaternary age. In western Jefferson County, in the area mapped as underlain by

REFERENCE 6

MILTON RAABE, WATER DEPARTMENT,
RECORD OF COMMUNICATION WITH HILARY MCCONNELL,
FLUOR DANIEL, INC., FEBRUARY 3, 1993.

RECORD OF TELEPHONE CONVERSATION

From: Hilary McConnell Date: 02-03-93

Location: Fluor Daniel, Inc. Dallas Time: 2:30 PM

Subject: File Information

To: Milton Raabe -City Engineer - Water Dept. P.O. Number: _

Location: Hot Springs, Ar

Other Ref.: (501) 321-6861

Hot Springs Municipal Water is the water company serving this site. It is a surface water system. Water is drawn from Lake Hamilton and put in Lake Side Park Reservoir. There are no private wells.

REFERENCE 7

CORPS OF ENGINEERS, RECORD OF COMMUNICATION WITH
HILARY MCCONNELL, FLUOR DANIEL, INC., MARCH 15, 1993.

RECORD OF TELEPHONE CONVERSATION

From: Hilary McConnell **Date:** 03-15-93

Location: Fluor Daniel, Inc. Dallas **Time:** 10:45 AM

Subject: Hot Springs Gas & Light

To: Corp of Engineers **P.O. Number:**

Location: Vicksburg, Mississippi

Other Ref.: (601) 631-5672

Lake Catherine flows at a rate of 2757 cubic feet per second (cfs) into Ouachita River. Lake Catherine is maintained by Arkansas Power & Light. Taken this morning.

REFERENCE 8

**FEDERAL EMERGENCY MANAGEMENT AGENCY,
NATIONAL FLOOD INSURANCE PROGRAM, HOT SPRING, ARKANSAS.**

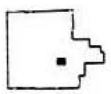
NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

GARLAND COUNTY, ARKANSAS
AND INCORPORATED AREAS

PANEL 93 OF 200
(SEE MAP INDEX FOR PANELS NOT PRINTED)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HOT SPRINGS, CITY OF	050084	0093	C
UNINCORPORATED AREAS	050433	0093	C

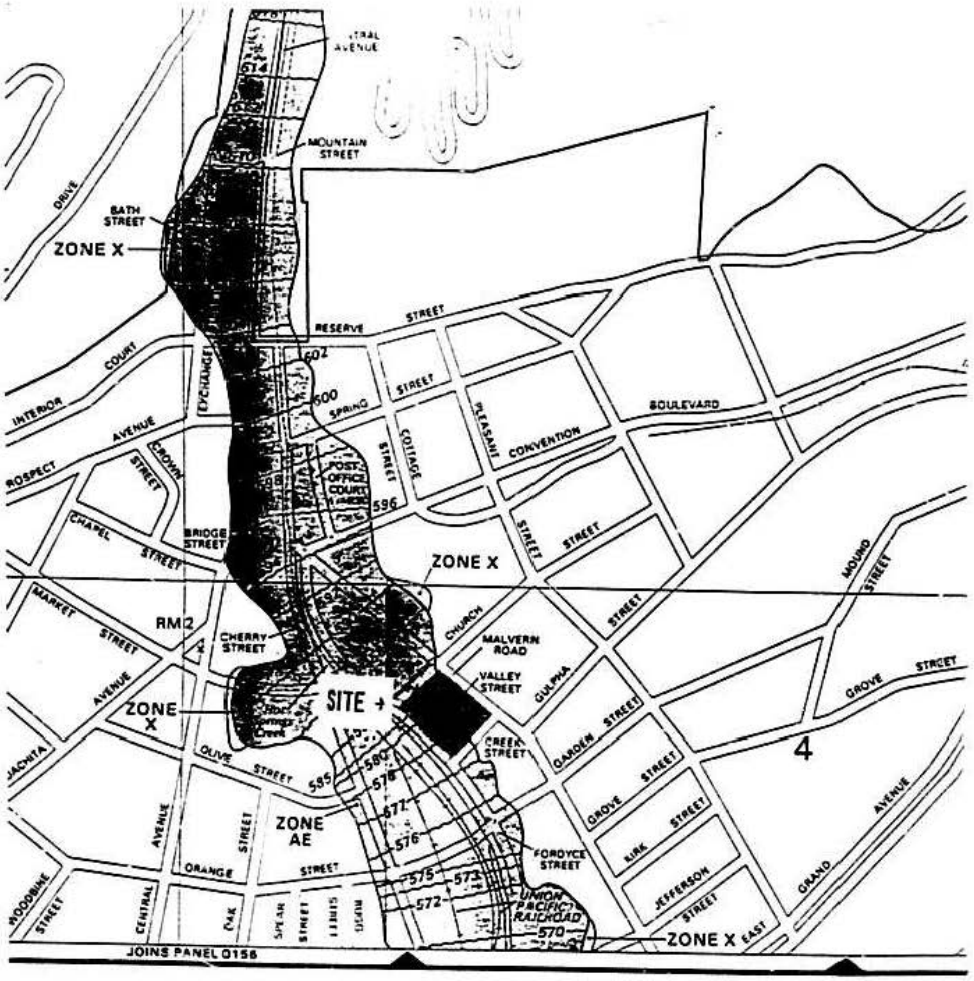


PANEL LOCATION

MAP NUMBER
05051C0093 C

EFFECTIVE DATE:
FEBRUARY 15, 1991

Federal Emergency Management Agency



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD*

- **ZONE A** — No base flood elevations determined.
- **ZONE AE** — Base flood elevations determined.
- **ZONE AH** — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- **ZONE AO** — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE A99** — To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.
- **ZONE V** — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- **ZONE VE** — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- **ZONE X** — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- **ZONE X** — Areas determined to be outside 500-year floodplain.
- **ZONE D** — Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

- Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- 513 — Base Flood Elevation Line; Elevation in Feet*
- D — Cross Section Line
- (EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*
- RM7X — Elevation Reference Mark
- •M1.5 — River Mile

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

The map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for possible updated flood hazard information prior to use of this map for property purchase or construction purposes.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Areas of special flood hazard (100-year flood) include Zones A, AE, AH, AO, A99, V, and VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

Elevation reference marks are described in the Flood Insurance Study Report.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of this map.

For community map revision history prior to countywide mapping, see section 6.0 of the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY

Refer to Repository Listing on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
FEBRUARY 15, 1991

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

Refer to the Flood Insurance Rate Map Effective date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

N

APPROXIMATE SCALE

500 0 500 FEET

REFERENCE 9

**JIM ATCHLEY, STREET DEPARTMENT CITY OF HOT SPRINGS,
RECORD OF COMMUNICATION WITH HILARY MCCONNELL,
FLUOR DANIEL, INC., MARCH 17, 1993.**

RECORD OF TELEPHONE CONVERSATION

From: Hilary McConnell **Date:** 3/17/93

Location: Fluor Daniel, Inc, Dallas **Time:** 9:30 AM

Subject:

To: Street Dept, Flood Plan/Jim Atchley **P.O. Number:**

Location: Hot Springs, Arkansas

Other Ref.: (501) 321-6931, (501) 321-6884

Hot Springs flows into Lake Hamilton.

All drainage from the site enters the Hot Springs Creek which empties into Lake Hamilton. The city gets its drinking water from the Northwest corner of Lake Hamilton. Lake Hamilton flows to the east.

REFERENCE 10

**DENNIS SWARTWOUT, NATIONAL WETLAND INVENTORY,
RECORD OF COMMUNICATION WITH HILARY MCCONNELL,
FLUOR DANIEL, INC., MARCH 4, 1993.**

RECORD OF TELEPHONE CONVERSATION

From: Hilary McConnell **Date:** 03-04-93

Location: Fluor Daniel, Inc. Dallas **Time:** 10:25 AM

Subject: File Information

To: Dennis Swartwout, National Wetland Inventory **P.O. Number:**

Location: Unknown

Other Ref.: (413) 545-0359

According to NWI there are no Wetland maps available for longitude 92° or 93° for the state of Arkansas.

REFERENCE 11

DANNY SUDNEYER, SOIL CONSERVATION SERVICE,
RECORD OF COMMUNICATION WITH HILARY MCCONNELL,
FLUOR DANIEL, INC., MARCH 29, 1993.

RECORD OF TELEPHONE CONVERSATION

From: Hilary McConnell **Date:** 03-29-93

Location: Fluor Daniel, Inc. Dallas **Time:** 10:30 AM

Subject: File information

To: Danny Sudneyer - District Conservationist **P.O. Number:**

Location: Hot Springs, Arkansas

Other Ref.: (501) 624-2574

It has not been determined yet if wetlands are within 15 miles downstream of the Hot Spring site. There are soils that are endemic of a wetland environment.

REFERENCE 12

ARKANSAS NATURAL HERITAGE COMMISSION, DEPARTMENT
OF NATURAL HERITAGE, GARLAND COUNTY,
DECEMBER 4, 1992.

Harold K. Grimmett
Director

ARKANSAS NATURAL HERITAGE COMMISSION
1500 TOWER BUILDING
323 CENTER STREET
LITTLE ROCK, ARKANSAS 72201
Phone: (501) 324-9150

Bill Clinton
Governor

Date: January 8, 1993
Subject: Arkansas Special Elements
ANHC No. P-CF..-93-001

Hilary McConnell
Fluor Daniel
12790 Merit Dr., Suite 200
Dallas, Texas 75251

Dear Ms. McConnell,

As per your request of 5 January 1993, please find enclosed County Element lists for Sebastian, Pulaski, Jackson, Ouachita, Miller, Jefferson, Phillips, and Garland Counties, Arkansas. Represented on these lists are rare plants, animals, exemplary natural communities and other special features for which we currently have records in our database in each county. A legend has been enclosed to assist you in interpreting the information contained on these lists. Also enclosed are brochures describing the agency and the information sharing program, a fee schedule and a copy of a User Request Form. Please feel free to contact us if you need additional information.

Sincerely,

Cindy Osborne

Cindy Osborne
Data Manager

Enclosures

LEGEND

STATUS CODES

FEDERAL STATUS CODES

C1 = Category 1; the U.S. Fish and Wildlife Service states it currently has substantial information on hand that supports listing these species as threatened or endangered.

C2 = Category 2; the U.S. Fish and Wildlife Service states that further biological research and field study will be necessary in order to determine if these species should be listed as threatened or endangered.

3C = These species have been reviewed by the U.S. Fish and Wildlife Service and the determination has been made that special designation is not warranted.

3B = Names that, on the basis of current taxonomic understanding (usually as represented in published revisions and monographs) do no represent distinct taxa meeting the Endangered Species Act's definition of "species." Such supposed taxa could be reevaluated in the future on the basis of new information.

LE = Listed Endangered; the U.S. Fish and Wildlife Service has listed these species as endangered.

LT = Listed Threatened; the U.S. Fish and Wildlife Service has listed these species as threatened.

LELT = Listed Endangered and Threatened; the U.S. Fish and Wildlife Services has listed these species as endangered and threatened in different parts of the breeding range.

PE = Proposed Endangered; the U.S. Fish and Wildlife Service has proposed these species for listing as endangered.

PT = Proposed Threatened; the U.S. Fish and Wildlife Service has proposed these species for listing as threatened.

GH = Of historical occurrence throughout its range, i.e., formerly part of the established biota, with the expectation that it may be rediscovered (e.g., Bachman's Warbler).

GU = Possibly in peril range-wide but status uncertain; more information needed.

GX = Believed to be extinct throughout range (e.g., Passenger Pigeon) with virtually no likelihood that it will be rediscovered.

T-RANKS = T subranks are given to global ranks when a subspecies, variety, or race is considered at the state level. The subrank is made up of a "T" plus a number or letter (1, 2, 3, 4, 5, H, U, X) with the same ranking rules as a full species.

State Ranks

S1 = Extremely rare. Typically 5 or fewer estimated occurrences in the state, or only a few remaining individuals, may be especially vulnerable to extirpation.

S2 = Very rare. Typically between 5 and 20 estimated occurrences or with many individuals in fewer occurrences, often susceptible to becoming extirpated.

S3 = Rare to uncommon. Typically between 20 and 100 estimated occurrences, may have fewer occurrences but with large number of individuals in some populations, may be susceptible to large-scale disturbances.

S4 = Common. apparently secure under present conditions. Typically 100 or more estimated occurrences, but may be fewer with many large populations, may be restricted to only a portion of the state, usually not susceptible to immediate threats.

S5 = Very common. Demonstrably secure under present conditions.

SH = Historically known from the state, but not verified for an extended period, usually 15 years.

SU = Status uncertain, often because of low search effort or cryptic nature of the element.

SX = Apparently extirpated from state.

STATE STATUS CODES

INV = Inventory Element; The Arkansas Natural Heritage Commission is currently conducting inventory work on these elements to determine their status in the state. These elements may include outstanding examples of Natural Communities, colonial nesting sites, outstanding scenic and geologic features as well as plants and animals which, according to current information, may be rare, peripheral, or of an undetermined status in the state.

SE = State Endangered; The Arkansas Natural Heritage Commission applies this term to native taxa which are in danger of being extirpated from the state.

ST = State Threatened; The Arkansas Natural Heritage Commission applies this term to native taxa which are likely to become endangered in Arkansas in the foreseeable future.

DEFINITION OF RANKS

Global Ranks

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.

G2 = Imperiled globally because of rarity (6-20 occurrences or few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.

G3 = Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single western state, a physiographic region in the East) or because of other factors making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 - 100.

G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

G5 = Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.

General Ranking Notes

Q = A "Q" in the global rank indicates the element's taxonomic classification as a species is a matter of conjecture among scientists.

.1,.2,.3 = A single decimal digit after a state rank may be used as a finer subdivision to further clarify a rank.

RANGES = Ranges are used temporarily until a final rank decision can be made.

? = A question mark is used temporarily when there is some indecision regarding the rank assignment or when an element has not been ranked.

24 NOV 1992

ARKANSAS NATURAL HERITAGE COMMISSION
DEPARTMENT OF ARKANSAS HERITAGE
INVENTORY RESEARCH PROGRAM
ELEMENTS OF SPECIAL CONCERN
GARLAND COUNTY

ELEMENT NAME	FEDERAL STATUS	STATE STATUS	GLOBAL RANK	STATE RANK
** Animals				
* Vertebrates				
AIMOPHILA AESTIVALIS, BACHMAN'S SPARROW	C2	INV	G3	S3
AMBYSTOMA ANNULATUM, RINGED SALAMANDER	-	INV	G4	S4
ARDEA HERODIAS, GREAT BLUE HERON	-	INV	G5	S3
BUTEO LINEATUS, RED-SHOULDERED HAWK	-	INV	G5	S1?
EGRETTA CAERULEA, LITTLE BLUE HERON	-	INV	G5	S2
ETHEOSTOMA PALLIDIDORSUM, PALEBACK DARTER	3C	INV	G2	S2
HALIAEETUS LEUCOCEPAHLUS, BALD EAGLE	LELT	INV	G3	S2
HEMIDACTYLIUM SCUTATUM, FOUR-TOED SALAMANDER	-	INV	G5	S2
MYOTIS AUSTRORIPARIUS, SOUTHEASTERN MYOTIS	C2	INV	G4	S2?
NOTURUS LACHNERI, OUACHITA MADTOM	C2	INV	G2	S2
REGINA SEPTEMVITTATA, QUEEN SNAKE	-	INV	G5	S1?
** Plants				
* Nonvascular plants				
PHORMIDIUM TRELEASEI, A BLUE-GREEN ALGA	-	INV	G?	S?
* Vascular plants				
ACER LEUCODERME, CHALK MAPLE	-	INV	G5Q	S2S3
AMORPHA OUACHITENSIS, OUACHITA LEADPLANT	C1	INV	G3Q	S3
ASPLENIUM EBENOIDES, SCOTT'S SPLEENWORT	3B	INV	G5	S1S2.2
ASPLENIUM X GRAVESII, GRAVE'S SPLEENWORT	-	INV	HYB	S1.2
ASTRAGALUS DISTORTUS VAR. ENGELMANNII, A MILK-VETCH	-	INV	G5TU	S2S3
CAREX ATLANTICA SSP. ATLANTICA, PRICKLY BOG SEDGE	-	INV	G5T4	S1S2
CAREX BROMOIDES, A SEDGE	-	INV	G5	S2.2
CAREX LAEVIVAGINATA, SMOOTH-SHEATH SEDGE	-	INV	G5	S1S2.2
CAREX LATEBRACTEATA, WATERFALL'S SEDGE	C2	ST	G3	S3
CAREX LEPTALEA, BRISTLY-STALK SEDGE	-	INV	G5	S3
CAREX PENSYLVANICA, PENNSYLVANIA SEDGE	-	INV	G5	S2S3
CASTANEA PUMILA VAR. OZARKENSIS, OZARK CHINQUAPIN	C1	INV	G5T3	S3S4
CIRSIUM MUTICUM, SWAMP THISTLE	-	ST	G5	S1.1
CYNOCTONUM MITREOLA, LAX HORNPOD	-	INV	G5	S3
CYPRIPEDIUM KENTUCKIENSE, SOUTHERN LADY'S-SLIPPER	C2	INV	G3	S3
DRYOPTERIS CELSA, LOG FERN	-	INV	G4	S1.2
DRYOPTERIS X AUSTRALIS, DRYOPTERIS	-	INV	HYB	S1
GALIUM ARKANSANUM VAR. PUBIFLORUM, A BEDSTRAW	-	INV	G5T2Q	S2

GARLAND COUNTY (CONT.)

ELEMENT NAME	FEDERAL STATUS	STATE STATUS	GLOBAL RANK	STATE RANK
GAYLUSSACIA BACCATA, BLACK HUCKLEBERRY	-	INV	G5	S1.2
HELIANTHUS OCCIDENTALIS SSP. PLANTAGINEUS, SHINNERS' SUNFLOWER	-	INV	G5T5	SH
ILEX LONGIPES, GEORGIA HOLLY	-	INV	G5	S3
LIPARIS LOESELII, YELLOW TWAYBLADE	-	ST	G5	S1.1
PHACELIA STRICTIFLORA VAR. ROBBINSII, A PHACELIA	-	INV	G5T5	S1S2.2
SANICULA SMALLII, SMALL'S SANICLE	-	INV	G5	S2S3
STENANTHIUM GRAMINEUM, EASTERN FEATHERBELLS	-	INV	G5	S3
STREPTANTHUS OBTUSIFOLIUS, A TWISTFLOWER	-	INV	G3	S3
THELYPTERIS NOVEBORACENSIS, NEW YORK FERN	-	INV	G5	S3
TRADESCANTIA LONGIPES, A SPIDERWORT	-	INV	G3G4	S1S2.2
TRADESCANTIA SUBASPERA, A SPIDERWORT	-	INV	G5	SU
TRICHOMANES PETERSII, DWARF FILMY-FERN	-	ST	G3	S2
UVULARIA PERFOLIATA, PERFOLIATE BELLWORT	-	INV	G5	S2.2
VALERIANELLA PALMERI, A CORN-SALAD	-	INV	G3	S3
** Natural Communities				
DRY SHORTLEAF PINE-OAK FOREST	-	INV	-	S4
NOVACULITE GLADE/OUTCROP	-	INV	-	S3
SPRING-OUACHITA MOUNTAINS	-	INV	-	-
XERIC SHORTLEAF PINE-OAK FOREST	-	INV	-	S3
** Other				
COLONIAL NESTING SITE	-	INV	-	-
GEOLOGICAL FEATURE	-	INV	-	-

REFERENCE 13

**USEPA GEMS CENSUS DATA SOFTWARE,
ASSESSED FEBRUARY, 1993.**

COVERAGE lgarland.gem

STATE	COUNTY	STATE NAME	COUNTY NAME
5	51	Arkansas	Garland Co
5	59	Arkansas	Hot Spring Co
5	125	Arkansas	Saline Co

CENTER POINT AT STATE : 5 Arkansas
COUNTY : 51 Garland Co

REGION OF THE COUNTRY

Zipcode found: 71901 at a distance of 0.9 Km

STATE	CITY NAME	COMMUNITY	FIPSCODE	LATITUDE	LONGITUDE
AR	HOT SPRINGS NATIONAL	ROCKWELL	05051	34.5050	93.0600

CENSUS DATA

Garland Gas and Light Co.

LATITUDE 34:30:22 LONGITUDE 93: 3: 2 1990 POPULATION

KM	0.00-.400	.400-.800	.800-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	1556	0	0	2808	937	0	5301
S 2	0	0	4733	4395	108	1680	10916
S 3	0	0	1081	3494	3663	4198	12436
S 4	0	0	3154	4386	65	2511	10116
RING TOTALS	1556	0	8968	15083	4773	8389	38769

STAR STATION

WBAN NUMBER	STATION NAME	LATITUDE	LONGITUDE	PERIOD OF RECORD	DISTANCE (km)
13963	LITTLE ROCK/ADAMS AR	34.7333	92.2333	1955-1964	78.9
93992	ELDORADO/GOODWIN AR	33.2167	92.8000	1950-1954	145.1
13977	TEXARKANA/WEBB AR	33.4500	94.0000	1963-1967	146.3
13964	FT SMITH AR	35.3333	94.3667	1955-1974	151.1
13939	GREENVILLE MS	33.4833	90.9833	1955-1960	221.7
13957	SHREVEPORT LA	32.4667	93.8167	1970-1974	237.4
13942	MONROE/SELMAN LA	32.5167	92.0500	1954-1958	239.7

U.S. SOIL DATA

STATE : ARKANSAS

LATITUDE : 34:30:22 LONGITUDE : 93: 3: 2

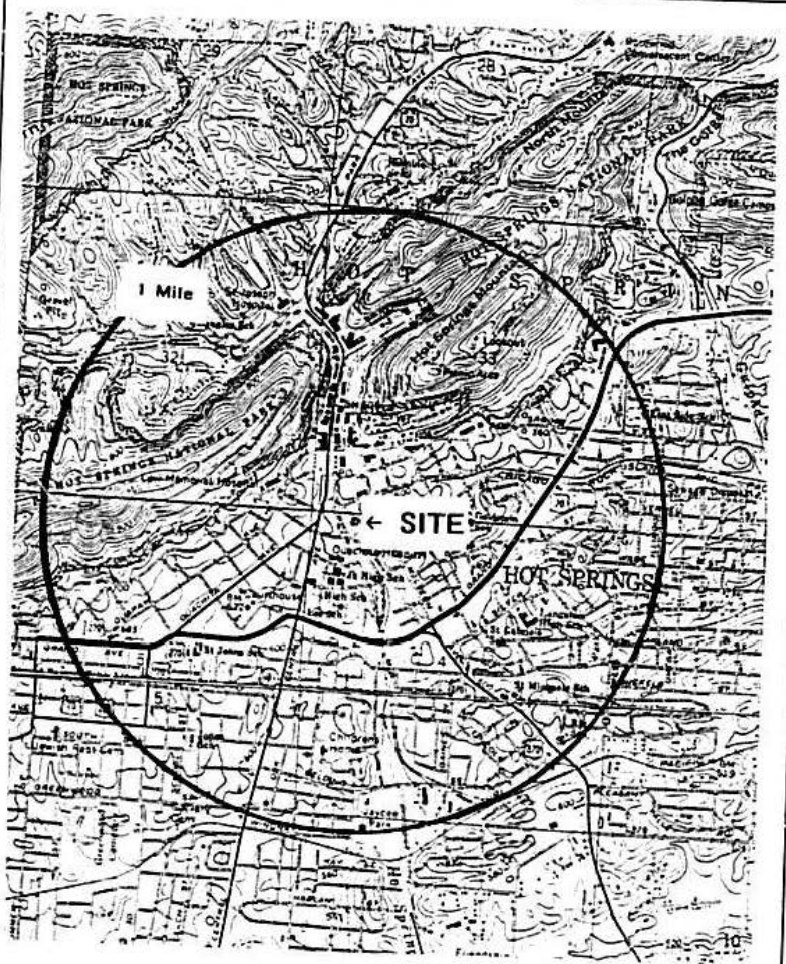
THE STATION IS INSIDE H.U. 8040101

GROUND WATER ZONE	:	10			
RUNOFF SOIL TYPE	:	1			
EROSION	:	6.5990E-04			CM/MONTH
DEPTH TO GROUND WATER BETWEEN	:	3.0000E+02	AND	1.0000E+03	
FIELD CAPACITY FOR TOP SOIL	:	6.0000E-02			
EFFECTIVE POROSITY BETWEEN	:	2.0000E-02	AND	3.0000E-01	
SEEPAGE TO GROUNDWATER BETWEEN	:	4.6330E+03	AND	1.3900E+04	CM/MONTH
DISTANCE TO DRINKING WELL	:	2.7000E+04			CM

FIGURES

FIGURE 1

SITE LOCATION MAP



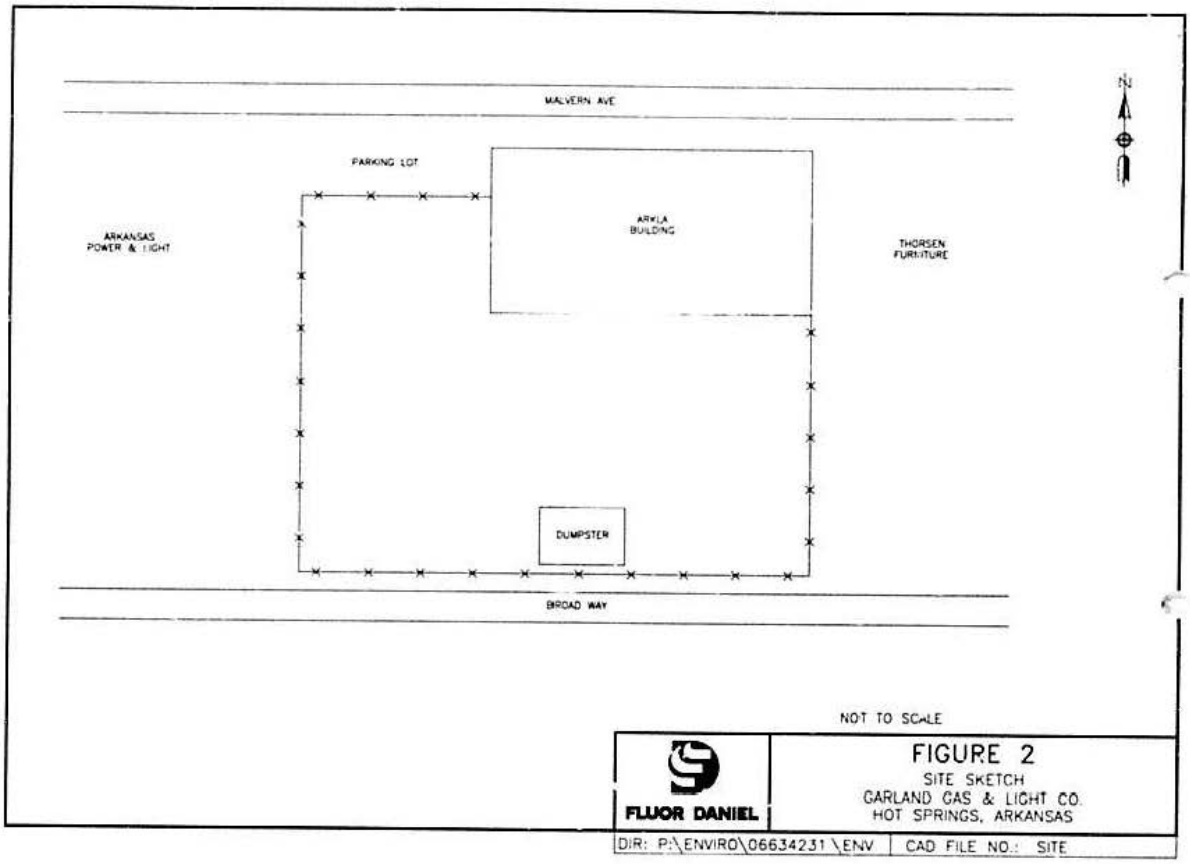
USGS 7½ MIN. TOPOGRAPHIC MAP
HOT SPRINGS, ARKANSAS - 1958
SCALE 1:24000

FLUOR DANIEL

FIGURE 1
SITE LOCATION MAP
GARLAND GAS & LIGHT CO.
HOT SPRINGS, ARKANSAS

FIGURE 2

SITE SKETCH



NOT TO SCALE

FLUOR DANIEL

FIGURE 2
SITE SKETCH
GARLAND GAS & LIGHT CO.
HOT SPRINGS, ARKANSAS

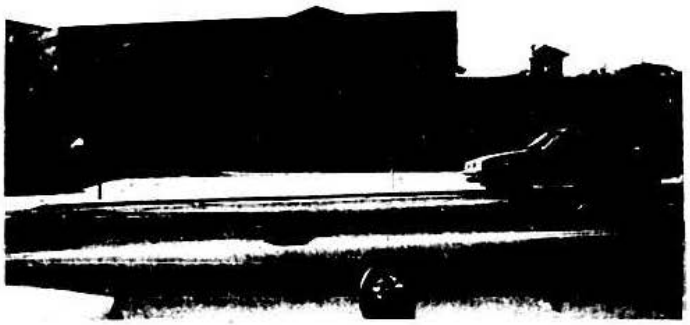
DIR: P:\ENVIRO\06634231\ENV | CAD FILE NO.: SITE

ATTACHMENT 1

SITE PHOTOGRAPHS

Photo No

1



Site Name
Garland Gas & Light
CERCLIS # [illegible] Photographer/Witness McConnell Koenninger
Location Date 2/18/93 Time AM Direction South
Hot Springs, Arkansas Description North side of ARKLA building
Project # [illegible]

Photo No

2

[illegible] Photographer/Witness McConnell Koenninger
01 4 Date 2/18/93 Time AM Direction South
Description North side of site. This is the ARKLA parking lot.

Photo No

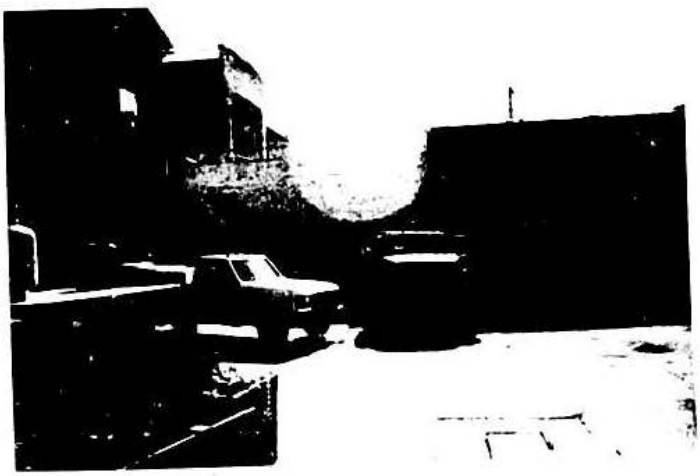
3

Site Name
Garland Gas & Light
CERCLIS #
Location
Hot Springs, Arkansas
Project # 96634231

Photographer Witness McConnell Koeninger
Date 2/18/93 Time AM Direction Northwest
Description West side of AR&L Building

Photo No

4



Roll
01 4

Witness
Date 2/18/93 Time AM Direction East
Description The east side of Thoreen Furniture

Photo No

5

Site Name:
Garland Gas & Light
CERCLIS #: ARD980626538 Photographer Witness McConnell Koeninger
Location: Date 2 18 93 Time AM Direction South
Hot Springs, Arkansas Description South side of the site. Broad Way is in the background.
Project # 06634221

Photo No
6

Site Name: Garland Gas & Light
CERCLIS #: ARD983267535
Location: Hot Springs, Arkansas
Project #: 06634231

Photographer: Witness: McConnell, Kornegay
Date: 2/28/03 Time: AM Direction: East
Description: Hot Springs Creek

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